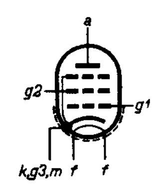
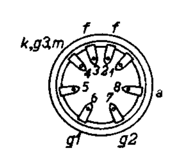


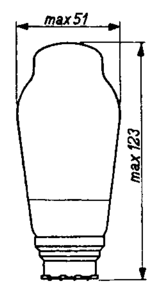
4699

OUTPUT PENTODE
PENTHODE DE SORTIE
ENDPENTHODE

Heating :	indirect by A.C.; parallel supply	
Chauffage :	indirect par C.A.; alimentation en parallèle	Vf= 6,3 V If= 1,0 A
Heizung :	indirekt durch Wechselstrom; Parallelspeisung	







Capacities
Capacités
Kapazitäten

Ca	=	13,5	pF
Cg1	=	18,5	pF
Cag1	<	0,7	pF
Cg1f	=	1,5	pF
Ckf	=	8,5	pF

PHILIPS 4699

OUTPUT PENTODE
PENTHODE DE SORTIE
ENDPENTODE

Heating : indirect; parallel supply
Chauffage: indirect; alimentation- parallèle
Heizung : indirect; Parallelspeisung

V_f = 6,3 V
I_f = 1,5 A

Dimensions in mm
Dimensions en mm
Abmessungen in mm

a, g2, g1, k,g3, f, f

k,g3, f, f, 4, 3, 2, 1, 5, 8, a, 6, 7, g1, g2

max 115
max 38

Base, culot, Sockel: P

Capacitances Capacités Kapazitäten		
C_a = 13,5 pF	C_{ag1} <	0,7 pF
C_{g1} = 18,5 pF	C_{g1f} =	1,5 pF
	C_{kf} =	8,5 pF

Operating characteristics class A
Caractéristiques d'utilisation classe A
Betriebsdaten Klasse A

V_a	=	250 V
V_{g2}	=	250 V
R_k	=	90 Ω
I_a	=	72 mA
I_{g2}	=	8 mA
S	=	14,5 mA/V
μ_{g2g1}	=	20 -
R_i	=	20 kΩ
$R_{a\sim}$	=	3,5 kΩ
V_i (I_{g1}=+0,3μA)	=	5,3 V_{eff}
W_o (I_{g1}=+0,3μA)	=	8 W
d_{tot} (I_{g1}=+0,3 μA)	=	10 %
V_i (W_o = 50 mW)	=	0,3 V_{eff}



Operating conditions class A
Caractéristiques d'utilisation classe A
Betriebsdaten Klasse A

Va	=	250	V
Vg2	=	250	V
Rk	=	90	Ω
Ia	=	72	mA
Ig2	=	8	mA
S	=	14,5	mA/V
μg2g1	=	20	-
Ri	=	20	kΩ
Ra	=	3,5	kΩ
Vi (Ig1=+0,3 μA)	=	5,3	V_{eff}
Wo (Ig1=+0,3 μA)	=	8	W
d (Ig1=+0,3 μA)	=	10	%
Vi (Wo = 50 mW)	=	0,3	V_{eff}

Operating conditions class AB
Caractéristiques d'utilisation classe AB
Betriebsdaten Klasse AB

Raa'	=	8		6		kΩ
Rg2	=	2,2		0,7		kΩ
Rk	=	170		125		Ω
Vi	=	0	17	0	14	V_{eff}
Vb_a	=	425	425	375	375	V
$Va+V_{Rk}$	=	405	400	355	350	V
Vb_{g2}	=	425	425	375	375	V
Ia	=	2x46	2x58	2x52	2x64	mA
Ig2	=	2x5	2x14,5	2x6,5	2x16,5	mA
Wo	=	0	29	0	27,5	W
d	=	-	5	-	4	%

Operating characteristics class AB
Caractéristiques d'utilisation classe AB
Betriebsdaten Klasse AB

$R_{aa\sim}$	=	8		6		kΩ
R_{g2}	=	2,2		0,7		kΩ
R_k	=	170		125		Ω
V_i	=	0	17	0	14	V_{eff}
V_{b_a}	=	425	425	375	375	V
V_a+V_{Rk}	=	405	400	355	350	V
$V_{b_{g2}}$	=	425	425	375	375	V
I_a	=	2x46	2x58	2x52	2x64	mA
I_{g2}	=	2x5	2x14,5	2x6,5	2x16,5	mA
W_o	=	0	29	0	27,5	W
d_{tot}	=	-	5	-	4	%

Operating characteristics class AB in triode connection (g2 connected to anode)
Caractéristiques d'utilisation classe AB en connexion triode (g2 reliée à l'anode)
Betriebsdaten Klasse AB in Triodenschaltung (g2 verbunden mit Anode)

V_b	=	400		V
R_k	=	175		Ω
$R_{aa\sim}$	=	5,5		kΩ
V_i	=	0	13,5	V_{eff}
I_a	=	2x48	2x54	mA
W_o	=	0	13	W
d_{tot}	=	-	1,5	%

Limiting values
Caractéristiques limites
Grenzdaten

V_{a_o}	= max.	800 V	$W_{g2}(V_i=0)$	= max.	2	W
V_a	= max.	425 V	$W_{g2}(W_o=\text{max.})$	= max.	5	W
W_a	= max.	18 W	$V_{g1}(I_{g1}=+0,3\mu A)$	= max.	-1,3	V
V_{g2_o}	= max.	650 V	$R_{g1}(A,AB)$	= max.	0,7	MΩ
V_{g2}	= max.	425 V	$R_{g1}(B)$	= max.	0,5	MΩ
I_k	= max.	90 mA	V_{kf}	= max.	50	V
			R_{kf}	= max.	20	kΩ

Operating conditions class A in triode connection
(g2 connected to anode)
Caractéristiques d'utilisation classe A en
connexion triode (g2 reliée à l'anode)
Betriebsdaten Klasse A in Triodenschaltung
(g2 verbunden mit Anode)

Vb	=	375	V
Rk	=	300	Ω
Ra	=	4	kΩ
Ia	=	50	mA
Vi	=	11	V_{eff}
Wo	=	4,5	W
d	=	9	%

Operating conditions class AB in triode connection
(g2 connected to anode)
Caractéristiques d'utilisation classe AB en
connexion triode (g2 reliée à l'anode)
Betriebsdaten Klasse AB in Triodenschaltung
(g2 verbunden mit Anode)

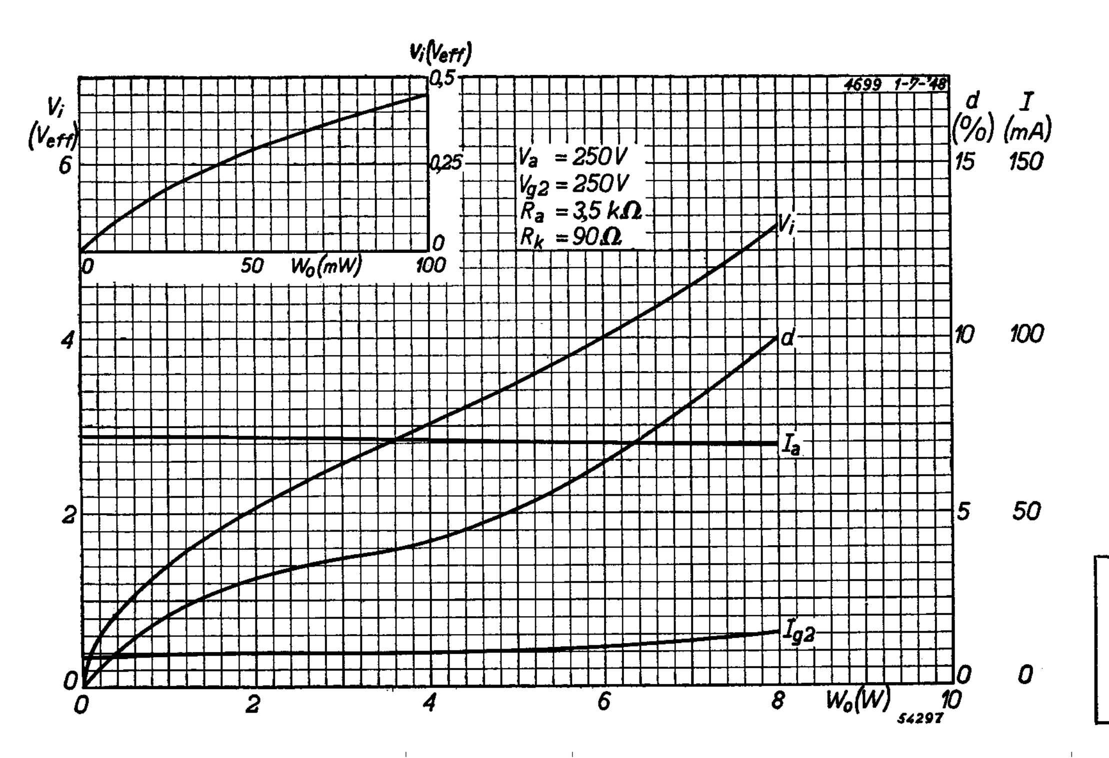
Vb	=	400		V
Rk	=	175		Ω
Raa'	=	5,5		kΩ
Vi	=	0	13,5	V_{eff}
Ia	=	2x48	2x54	mA
Wo	=	0	13	W
d	=	-	1,5	%

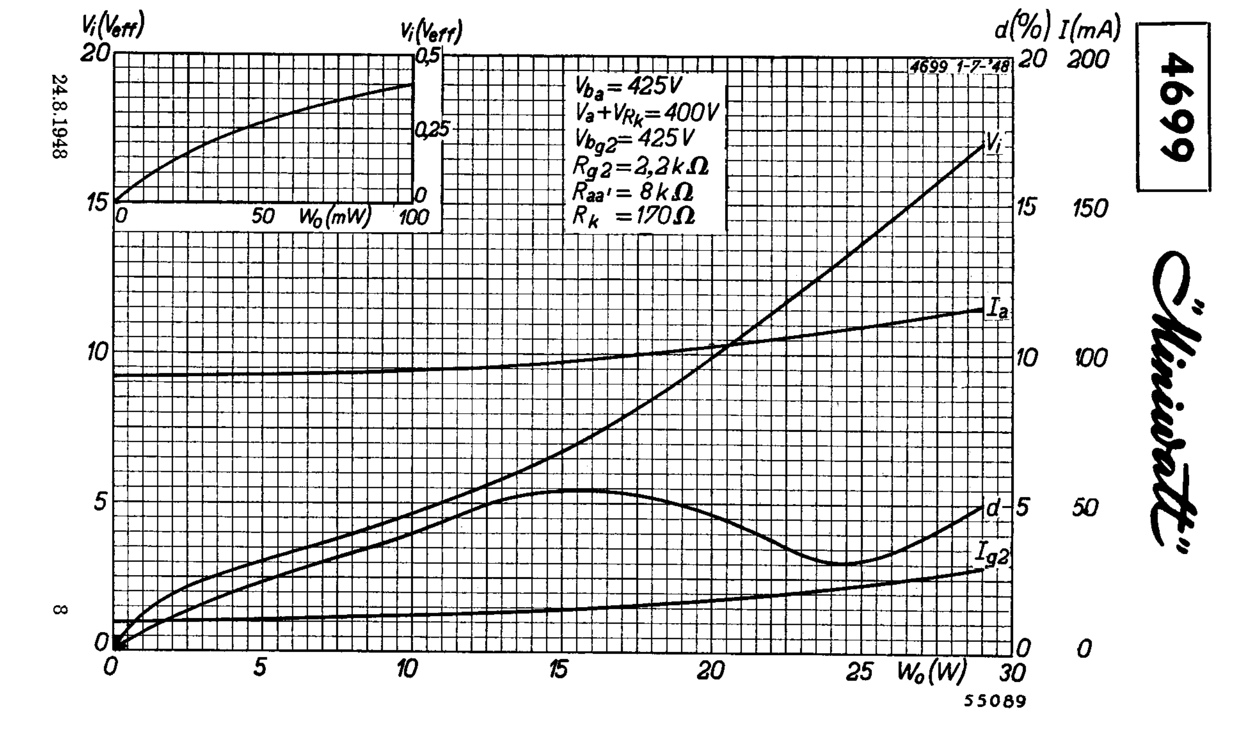


"Miniwatt"

Limiting values
Caractéristiques limites
Grenzdaten

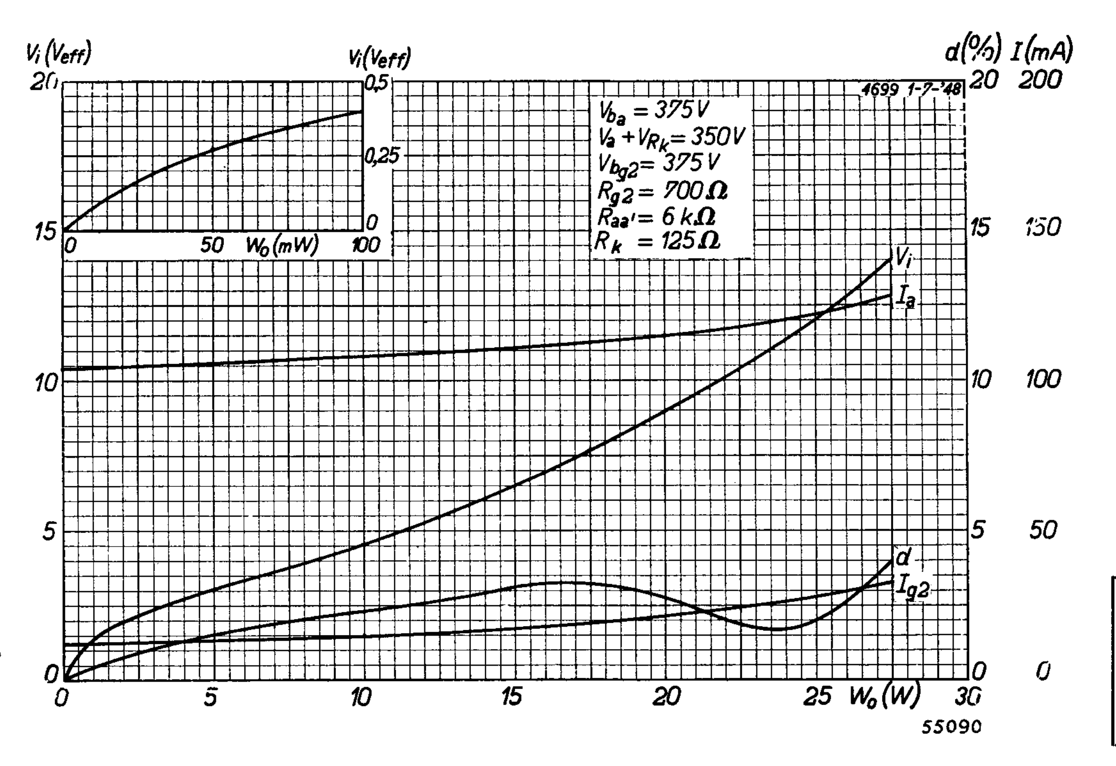
Va_o	= max.	800 V
Va	= max.	425 V
Wa	= max.	18 W
$Vg2_o$	= max.	650 V
Vg2	= max.	425 V
Wg2 (Vi = 0)	= max.	2 W
Wg2 (Wo = max.)	= max.	5 W
Ik	= max.	90 mA
Vg1 (Ig1 = +0,3μA)	= max.	-1,3 V
Rg1 (A, AB)	= max.	0,7 MΩ
Rg1 (B)	= max.	0,5 MΩ
Vfk	= max.	50 V
Rfk	= max.	20 kΩ


v_i(V_{eff})
V_i (V_{eff})
4699 1-7-'48
d (%)
I (mA)
V_a = 250V
V_{g2} = 250V
R_a = 3,5 kΩ
R_k = 90Ω
W_o(mW)
V_i
d
I_a
I_{g2}
W_o(W)
54297

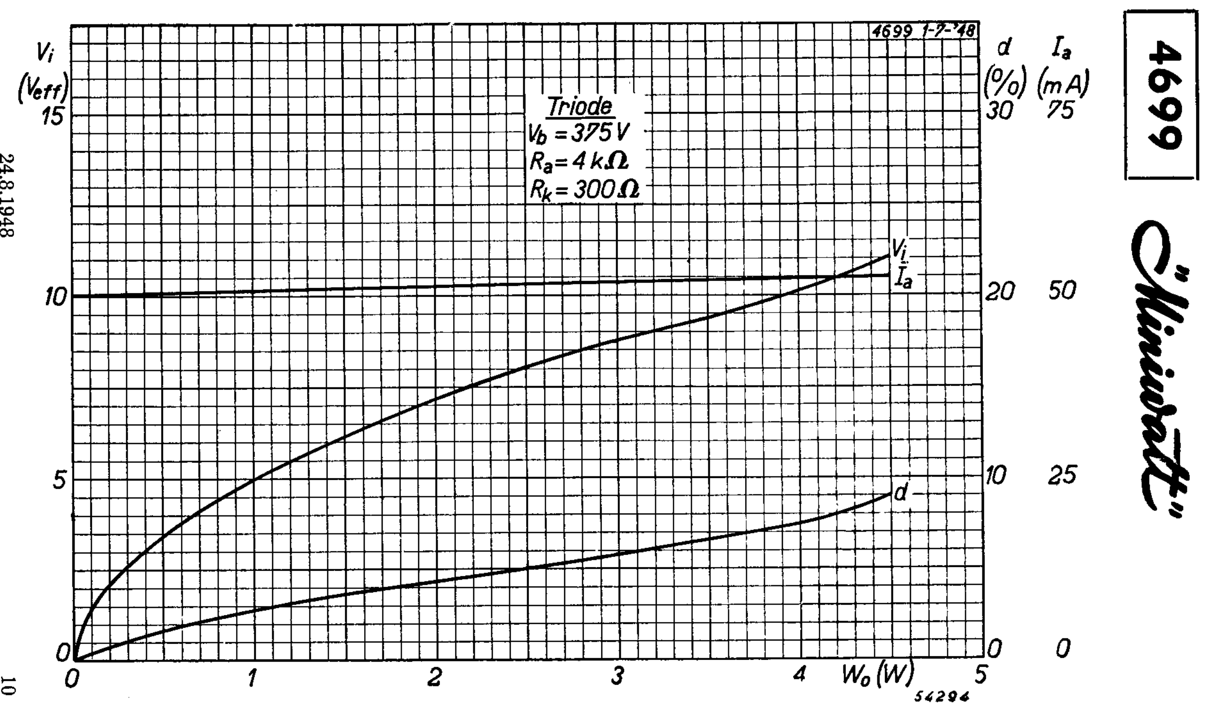


4699
"Miniwatt"
Vi(Veff)
d(%) I(mA)
4699 1-7-'48
Vba = 425V
Va+VRk = 400V
Vbg2 = 425V
Rg2 = 2,2kΩ
Raa' = 8kΩ
Rk = 170Ω
Wo(mW)
Vi
Ia
d
Ig2
Wo(W)
55089

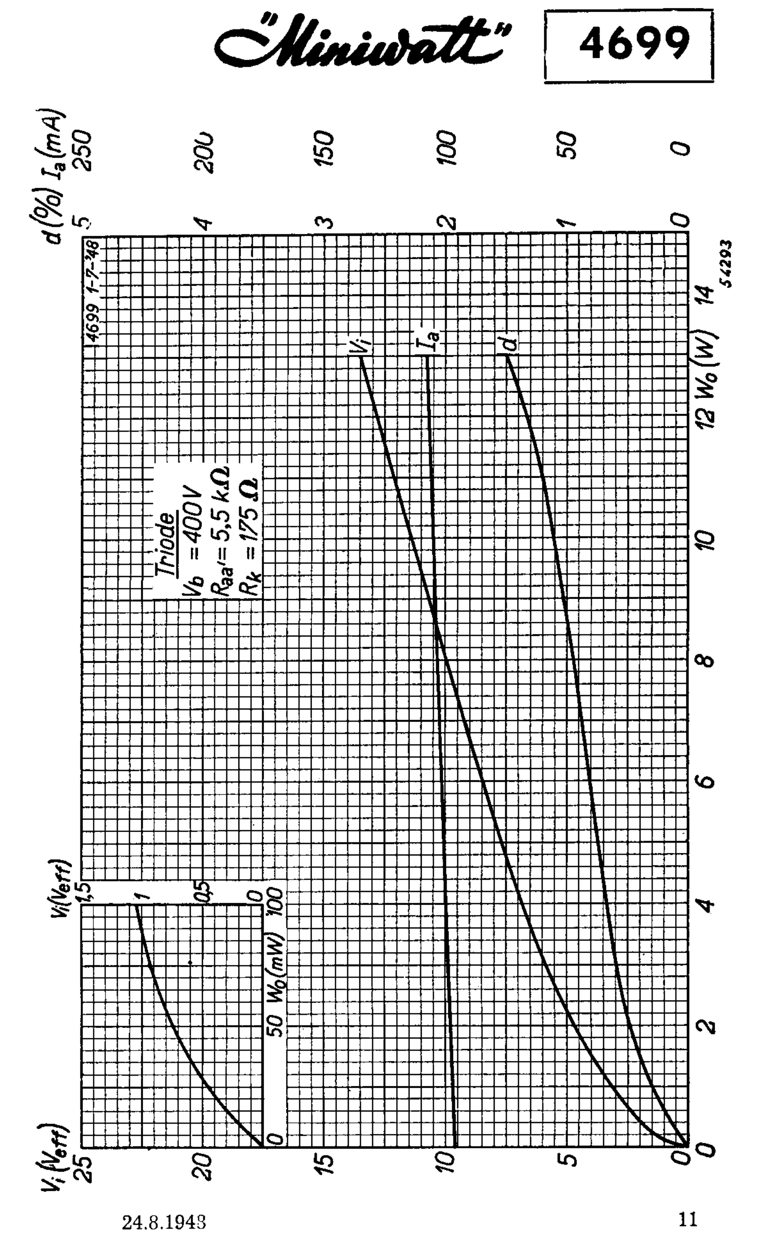
24.8.1948



V_i (V_{eff})
V_i (V_{eff})
d(%) I(mA)
4699 1-7-'48
V_{ba} = 375 V
$V_a + V_{Rk}$ = 350 V
V_{bg2} = 375 V
R_{g2} = 700 Ω
$R_{aa'}$ = 6 kΩ
R_k = 125 Ω
W_o (mW)
V_i
I_a
d
I_{g2}
W_o (W)
55090



4699 1-7-'48
Vi (Veff) 15 10 5 0
d (%) 30 20 10 0
Ia (mA) 75 50 25 0
Triode
Vb = 375 V
Ra = 4 kΩ
Rk = 300 Ω
Vi
Ia
d
0 1 2 3 4 Wo (W) 5
54294


Triode
V_b = 400V
R_{aa}' = 5,5 kΩ
R_k = 175 Ω
V_i
I_a
d
d(%) I_a(mA)
W_o(W)
V_i(V_{eff})
W_o(mW)
4699 1-7-'48
54293



4699

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6	4	1948.08.24
7	7	1948.08.24
8	8	1948.08.24
9	9	1948.08.24
10	10	1948.08.24
11	11	1948.08.24
12	FP	1999.02.25